IN THE CLAIMS

Please amend claims 20-37, as shown below. Please add new claims 38-47. Claims 1-19 were previously canceled. The following listing of claims replaces all prior listings.

1-19. (Canceled).

20. (Currently amended) A method of detecting and characterizing a target biomolecule in a sample comprising:

(a) forming a complex comprising a target biomolecule and a substrate molecule, the substrate molecule including a substrate linked to a sensitizer, ~~sensitizer-linked~~ the substrate molecule being capable of recognizing the target biomolecule, by contacting the target biomolecule with the ~~sensitizer-linked~~ substrate molecule;

(b) irradiating the complex to cause an emission signal from the sensitizer; ~~and~~

(c) determining the presence of the complex by the signal emitted by the sensitizer to detect the target biomolecule; and

(d) characterizing the target biomolecule by optically analyzing the same to determine the structural properties thereof.

21. (Currently amended) The method of claim 20, wherein said substrate ~~moiety~~ is a binding element of the ~~target biomolecule~~ substrate molecule.

22. (Currently amended) The method of claim 20, wherein said sensitizer is located at or near the surface of the target biomolecule when the substrate ~~moiety~~ of the ~~sensitizer-linked~~ substrate molecule is bound to the target biomolecule.

23. (Currently amended) The method of claim 20, wherein[[,]] said biomolecule is a metalloprotein.

24. (Currently amended) The method of claim 23, wherein[[,]] said metalloprotein is a heme protein.

25. (Currently amended) The method of claim 23, wherein[[,]] ~~said the~~ said biomolecule is cytochrome P450.

26. (Currently amended) The method of claim 20, wherein[[,]] said sensitizer is a photosensitizer.

27. (Currently amended) The method of claim 26[[,]] wherein, said photosensitizer is $Ru(bpy)_3^{2+}$.

28. (Currently amended) The ~~molecule~~ method of claim 27, wherein[[,]] said $Ru(bpy)_3^{2+}$ complex is the Δ or Λ enantiomer.

29. (Currently amended) The ~~molecule~~ method of claim 26, where said photosensitizer is selected from the group consisting of $[Ru(phen)_2dppz]^{2+}$ ~~or~~ and $[Ru(phen)_2dppa]^{2+}$.

30. (Currently amended) The ~~molecule~~ method of claim 26, wherein[[,]] said photosensitizer is a coumarin molecule.

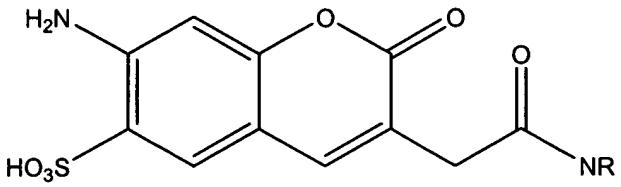
31. (Currently amended) The ~~molecule~~ method of claim 20, wherein[[,]] said linker is a molecule of sufficient length to allow the substrate to bind to the active site of the biomolecule so that upon binding the sensitizer is located at or near the surface of the target biomolecule.

32. (Currently amended) The method of claim 20, wherein[[,]] said linker is an alkyl chain, $(CH_2)_n$, wherein n = 1-13.

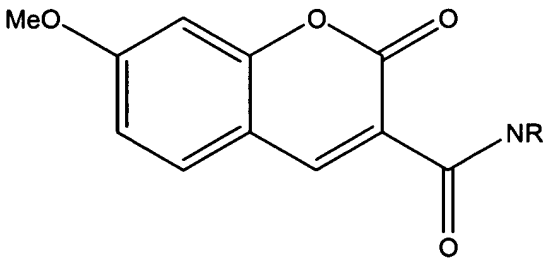
33. (Currently amended) The method of claim 20, wherein[[,]] said substrate is a molecule that binds to the active site of cytochrome P450.

34. (Currently amended) The method of claim 33, wherein ~~the~~ said substrate is selected from the group consisting of ~~adamantine (Ad)~~ adamantane, ethylbenzene ~~(EB)~~, and imidazole ~~(Im)~~.

35. (Currently amended) The method of claim 26, wherein[[,]] ~~the~~ said sensitizer-linked substrate molecule is selected from the group consisting of 4-, 6-, 7-, substituted coumarins shown by structures (I) and (II):

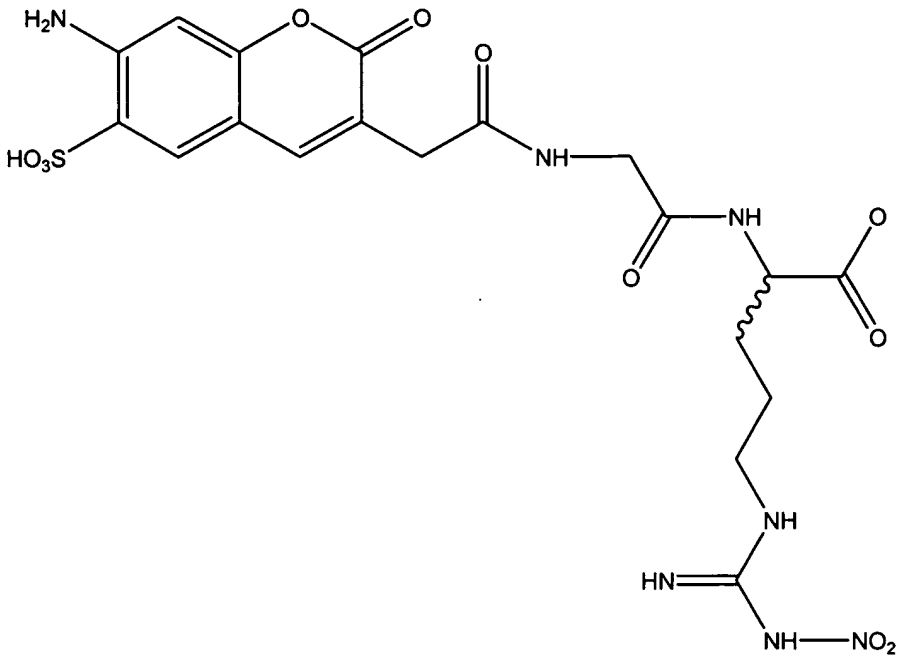


(I)

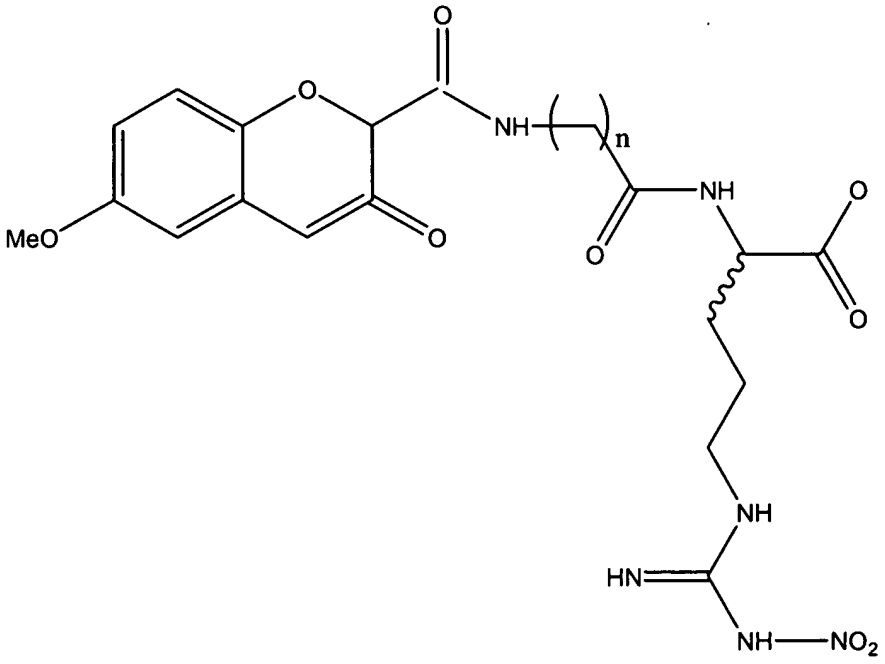


(II)

36. (Currently amended) The method of claim 26, wherein[[,]] ~~the~~ said sensitizer-linked substrate molecule is selected from the group consisting of compounds shown by structures (III) and (IV):



(III)



(IV)

37. (Currently amended) A method of identifying an agent of interest that modulates a target biomolecule activity in a sample comprising:

(a) forming an adduct comprising the target biomolecule and a sensitizer-linked substrate molecule;

(b) contacting the adduct with a plurality of the candidate agents of interest to form a plurality of complexes;

(c) irradiating ~~the~~ each complex to cause an emission signal from the sensitizer; ~~and~~

(d) detecting the signals emitted by the sensitizer-linked substrate molecule and/or by ~~the~~ each complex ~~to identify the agent of interest~~, the change in the signals being indicative that the candidate agent of interest ~~modulates~~ is capable of modulating the target biomolecule activity in the sample; and

(e) selecting the identifying agent based on the modulating capacity of each of the candidate agents.

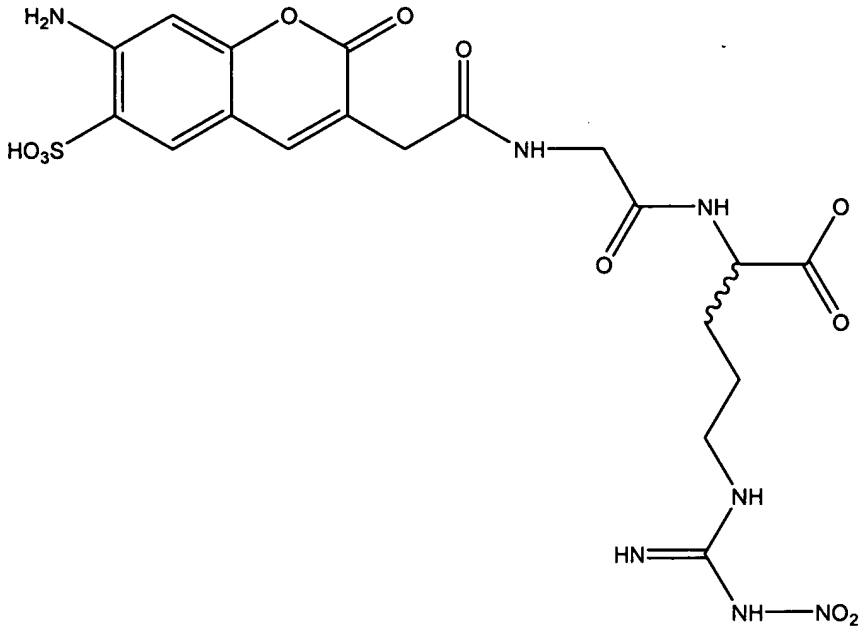
38. (New). A method of detecting a target biomolecule in a sample comprising:

(a) forming a complex comprising a target biomolecule and a substrate molecule, the substrate molecule including a substrate linked to a sensitizer, the substrate molecule being capable of recognizing the target biomolecule, by contacting the target biomolecule with the substrate molecule;

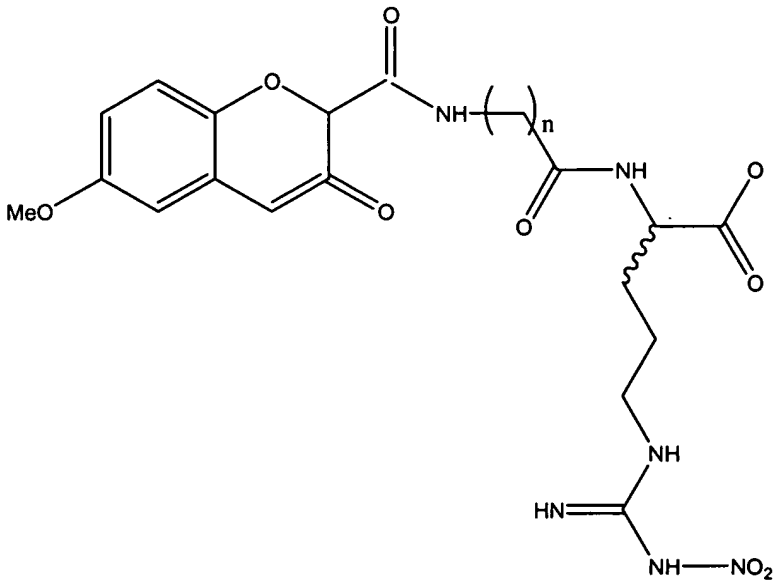
(b) irradiating the complex to cause an emission signal from the sensitizer; and

(c) determining the presence of the complex by the signal emitted by the sensitizer to detect the target biomolecule,

wherein said sensitizer is a photosensitizer and said sensitizer-linked substrate molecule is selected from the group consisting of compounds shown by structures (III) and (IV):



(III)



(IV)

39. (New) The method of claim 38, wherein said substrate is a binding element of the substrate molecule.

40. (New) The method of claim 38, wherein said sensitizer is located at or near the surface of the target biomolecule when the substrate of the substrate molecule is bound to the target biomolecule.

41. (New) The method of claim 38, wherein said biomolecule is a metalloprotein.

42. (New) The method of claim 41, wherein said metalloprotein is a heme protein.

43. (New) The method of claim 41, wherein said biomolecule is cytochrome P450.

44. (New) The method of claim 38, wherein said linker is a molecule of sufficient length to allow the substrate to bind to the active site of the biomolecule so that upon binding the sensitizer is located at or near the surface of the target biomolecule.

45. (New) The method of claim 38, wherein said linker is an alkyl chain, $(CH_2)_n$, wherein n = 1-13.

46. (New) The method of claim 20, wherein said substrate is a molecule that binds to the active site of cytochrome P450.

47. (New) The method of claim 46, wherein the said substrate is selected from the group consisting of adamantane, ethylbenzene, and imidazole.